What is claimed is:

1. An optical module comprising:

an optical element;

a supporting element configured to support the optical element;

a first optical fiber having a first end optically coupled to the optical element and a second end placed near to the supporting element; and

a second optical fiber fusion-spliced to the first optical fiber.

2. An optical module according to claim 1, wherein a fusion-spliced portion between the first optical fiber and the second optical fiber is supported by the supporting element.

3. An optical module comprising:

an optical element;

a supporting element configured to support the optical element;

a first optical fiber optically coupled to the optical element;

a second optical fiber connected to the first optical fiber; and

a resin element which is supported by the supporting element and with which a connected portion between the first optical fiber and the second optical fiber is covered.

4. An optical module according to claim 3, wherein the connected portion between the first optical fiber and the

second optical fiber is obtained by fusion splicing between the first optical fiber and the second optical fiber.

5. An optical module according to claim 3, wherein the optical module further comprises a sleeve with which the resin element is covered.

6. An optical module according to claim 5, wherein a through hole or a plurality of through holes are arranged in the sleeve.

7. An optical module according to claim 6, wherein one of the through holes is placed almost on the center of a peripheral surface of the sleeve.

8. An optical module according to claim 5, wherein the sleeve is made of a substance through which ultraviolet rays are transmitted, and the resin element is hardened by receiving the ultraviolet rays.

9. An optical module according to claim 8, wherein the sleeve is made of glass.

10. An optical module according to claim 5, wherein the optical module further comprises a resilient hood which is attached to the sleeve from a side of the second optical fiber so as to cover the sleeve and from which the second optical fiber is protruded.

11. An optical module according to claim 10, wherein a

thickness of the hood at a protruding portion of the second optical fiber is more than that of the hood at the other portions.

12. An optical module according to claim 10, wherein the hood is made of rubber.

13. An optical module according to claim 5, wherein the optical module further comprises

a holding element configured to be fitted to the sleeve; and

a fixing member configured to fix the holding element on the supporting element.

14. An optical module according to claim 13, wherein the holding element holds the first optical fiber by using thermosetting resin packed in the holding element.

15. An optical module according to claim 14, wherein the sleeve and the holding element are made of the same substance as each other, and the resin element hardened by receiving ultraviolet rays is placed in a fitting space between the sleeve and the holding element.

16. An optical module according to claim 14, wherein a groove is formed on the holding element, and the resin element is packed in the groove of the holding element.

17. An optical module according to claim 14, wherein the holding element and the first optical fiber lead out from

the holding element are covered with resin on the supporting element.

18. An optical module according to claim 5, wherein the supporting element comprises a package to seal the optical element, the package has a protrusive portion on an outside surface so as to hold the first optical fiber, and the package is configured to make the protrusive portion fit to the sleeve.

19. An optical module according to claim 18, wherein a groove is formed on a peripheral surface of the protrusive portion.

20. A method of manufacturing an optical module, comprising the steps of:

supporting a first optical fiber on a supporting element while optically coupling an optical element supported on the supporting element to the first optical fiber;

fusion-splicing the first optical fiber to a second optical fiber longer than the first optical fiber to each other;

inserting a fusion-spliced portion between the first optical fiber and the second optical fiber into a sleeve; and

packing resin into the sleeve in which the fusion-spliced portion is inserted.

21. A method of manufacturing an optical module according to claim 20, further comprising the step of:

hardening the resin packed into the sleeve.

22. A method of manufacturing an optical module according to claim 20, wherein the step of supporting the first optical fiber on the supporting element comprises the steps of:

inserting the first optical fiber into a holding element;

packing resin into the holding element in which the first optical fiber is inserted; and

placing the holding element on a fixing member to fix the holding element on the supporting element and to support the first optical fiber on the supporting element, and the step of inserting the fusion-spliced portion comprises the step of

fitting the holding element to the sleeve to insert the fusion-spliced portion into the sleeve.

23. A method of manufacturing an optical module according to claim 22, wherein the step of supporting the first optical fiber on the supporting element further comprises the step of:

hardening the resin packed into the holding element by heating the resin.